REMARKS

The above-outlined amendments and the following remarks are being submitted as a full and complete response to the office action dated May 20, 2004. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 6-9, 11, 13, and 15 are under consideration in this application. Claims 6-9, 11, 13, and 15 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicants' invention.

Additional Amendments

The claims are being amended to correct formal errors and/or to better disclose or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

Claims 6-9, 11, 13 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 6-9, 11, 13 and 15 were also rejected under 35 U.S.C. § 101 because the Examiner stated that these claims are directed to non-statutory subject matter. As indicated, the claims have been amended as required by the Examiner. Accordingly, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.

Prior Art Rejections

Claims 6-9 were rejected under 35 U.S.C. § 102(b) as being anticipated by OMIM (the online Mendelian Inheritance in Man). This rejection has been carefully considered, but is most respectfully traversed.

The knowledge database embedded in a computer-readable medium (105 in Fig. 1 shaped as a computer-readable medium) of the invention, as now recited in claim 6, comprises: a plurality of objects; and disposing (p. 32, line 3) or displaying (p. 32, line 5) relations between

the objects (e.g., text, images in a publication) embedded in ***publications*** in a medical or biological field (p. 2, line 9) in a natural language. The objects include phrase objects having phrases including terms extracted from the publications ("*the printed lingualized knowledge data 100 of medicine and biology, such as a textbook and a handbook, the lingualized knowledge data 101 such as an academic treatise and knowledge information, which is laid open on a remote system accessible through the network 109..., the academic information database 102 such as DNA sequence information, protein sequence information and lingualized knowledge related thereto, which is laid open on a remote system accessible through the network 109*" p. 13, lines 6-11) as object values by separating articles, pronouns, punctuations, and prepositions therefrom (e.g., "a," "an," and "the" in Fig. 9 ",", "of," "in," "for" in Figs. 12-13), and wherein the relations between the phrase objects are expressed ***as quantitative relation values*** (e.g., "*with regard to relation values, when two target objects are regarded as the same, -1 is set, when no relation exists between the objects, 0 is set, and when a relation exists between the objects, a value larger than 0 is set*" p. 16, 2nd paragraph).

As recited in claim 11, the relation values are obtained by quantifying frequencies of existence of the respective phrases being close to each other in the knowledge expressed by a natural language in an identical sentence, paragraph, page, document, or database ("*the phrases exist close to each other in the lingualized knowledge signifies, for example, that the phrases exist in the same page, the same paragraph or the same sentence of a document*" p. 7, lines 20-22).

As recited in claim 15, said relation values are obtained by quantifying similarities of patterns in existence of the phrases in knowledge expressed by a natural language, the similarities of patterns are obtained by extracting a corresponding set of numerical location values of each of the phases which include at least a line number and a page number, converting sets of location values into vectors, calculating distances between the vectors, and evaluating a short distance with a high similarity value and a long distance with a low similarity value (p. 20, lines 7-16, wherein a similarity between existing profiles counting the existing amount of phase objects is discussed with reference to a method of obtaining a relation value on the basis of occurrence patterns; the "existing profiles counting the existing amount of phase objects" corresponds to the "patterns").

Applicants contend that OMIM fails to teach or suggest such "*quantitative relation values* expressing the *disposing or displaying relations* between the objects embedded in

publications in a medical or biological field in a natural language" according to the invention.

In contrast, OMIM merely (1) uses two values indicating either "presence" or "absence" of a link; (2) assigns a MIM number1 to each OMIM entry which is given a unique six-digit number whose first digit indicates the mode of inheritance of the gene involved; and (3) allows searching by a EC/RN Number which was assigned by the Enzyme Commission or Chemical Abstract Service (CAS) to designate a particular enzyme or chemical, respectively. These values are essentially different from the "*quantitative relation values* expressing the *disposing or displaying relations* between the objects embedded in publications in a medical or biological field in a natural language" according to the invention.

Applicants contend that OMIM does not teach or disclose each and every feature of the present invention as disclosed in independent claim 6. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of

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1 http://www.ncbi.nlm.nih.gov/Omim/omimfaq.html#numbering_system

the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

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